

Aeronautical CNSI Research at NASA Glenn Research Center								
Research papers and presentation completed by NASA Glenn Civil Servants, 1998 to Present								
Update:	16 June	2008						
Number	YEAR	Paper	Published Presentation	Title	NASA GRC CS Author(s) NASA GRC Author(s)	Non- Primary Author	Primary Author	Co- Author
<b>1998</b>								
1	1998	X		Aeronautical Applications for Satellite Communications: Service Needs and Protocol Issues	R. J. Kerczewski, W. D. Ivancic, K. S. Martzaklis, D. S. Ponchak	X	X	Proceedings Fourth Ka Band Utilization Conference
<b>2000</b>								
2	2000	X		A Hybrid Satellite-Terrestrial Approach to Aeronautical Communication Networks	R. J. Kerczewski, G. J. Chomos, J. H. Griner, S. W. Mainger, K. S. Martzaklis	X	X	Proceedings AIAA 18th ICSSC
<b>2001</b>								
3	2001		X	NASA Datalink Communications Research & Technology Development For Aeronautics	K. Martzaklis	X		2001 ICNS
4	2001		X	NASA Aerospace Technology Enterprise Small Aircraft Transportation System	M. Zernic	X		2001 ICNS
5	2001	X		Aeronautical Satellite Assisted Process for Information Exchange through Network Technology (Aero-SAPIENT) Project: The Initial Trials	M. J. Zernic, L. C. Freudinger, A. T. Morris	X		Proceedings 2001 IEEE Aerospace
6	2001	X		Air Traffic Control Improvement Using Prioritized CSMA	D. Robinson	X		Proceedings 2001 IEEE Aerospace
7	2001	X		Satellite Communications for Aeronautics Applications – Technology Development and Demonstration	R. J. Kerczewski, D. J. Hodder, R. J. Zakrajsek	X	X	Proceedings 2001 IEEE Aerospace
8	2001	X		Performance of a Regional Aeronautical Telecommunications Network	S. C. Bretmersky, C. Ripamonti, V. K. Konangi, R. J. Kerczewski		X	Proceedings 2001 IEEE Aerospace
9	2001	X		Satellite Delivery of Aviation Weather Data	R. J. Kerczewski, R. Haendel	X		Proceedings AIAA 19th ICSSC
10	2001	X		Satellite Communications for Aeronautical Applications: Recent Research and Development Results	R. J. Kerczewski	X		Proceedings 7th Ka Band Utilization Conference
11	2001	X		Satellite Communications for Aeronautics Applications--Technology Development and Demonstration,	Kerczewski, R. J., Hodder, D. J., Zakrajsek, R. J.,	X		NASA/TM 2001-210766, March 2001
<b>2002</b>								
12	2002		X	CNS: An Integrated Vision for the Future	K. Martzaklis	X		2002 ICNS
13	2002		X	Modeling and Simulation Development Of Very High Frequency Digital Link Mode 3 in OPNET	T. C. Nguyen, S. Mainger		X	2002 ICNS
14	2002	X		Dual Purpose Simulation: New Data Link Test and Performance Limit Testing of Currently Deployed Data Link	D. Robinson	X		Proceedings 2002 ICNS
15	2002	X		Performance of VDL Modes 2, 3 and 4	S. Bretmersky, V. Konangi, R. Kerczewski,		X	Proceedings 2002 ICNS

16	2002		X	NASA Glenn Research Center Broadband Aeronautical Satellite Communications Demonstrations	R. Kerczewski	X		2002 ICNS
17	2002	X		Mobile Router Technology Development	D. Shell, J. Courtenay, W. D. Ivancic, D. Stewart, T. Bell		X	Proceedings 2002 ICNS
18	2002		X	An Overview of NASA Glenn Research Center's Aeronautical Communications Technology Development Efforts	R. Kerczewski	X		2002 ICNS
19	2002		X	RF Signal Switching & Distribution in Civil Aviation Aircraft	O. Ugweje, H. D. Nguyen, R. J. Kerczewski, F. Miranda, D. H. Ngo		X	2002 ICNS
20	2002		X	Securing Mobile and Wireless Networks	W. Ivancic	X		2002 ICNS
21	2002		X	Satellite Weather Information Service	R. Kerczewski, R. Haendel	X		2002 ICNS
22	2002	X		Aeronautical Communications Research and Development Needs for Future Air Traffic Management Applications	R. Kerczewski	X		Proceedings 2002 IEEE Aerospace Conference
23	2002	X		Comparison of VDL Modes in the Aeronautical Telecommunications Network	S. Bretmersky, V. K. Konangi, R. J. Kerczewski		X	Proceedings 2002 IEEE Aerospace Conference
24	2002	X		Simulation and Performance of Data Communication Using Aeronautical Mobile Satellite Service	C. Ripamonti, V. K. Konangi, R. J. Kerczewski		X	Proceedings 2002 IEEE Aerospace Conference
25	2002	X		Using Global Satellite Digital Audio Radio Systems for Aviation Weather Dissemination	R. S. Haendel, R. J., Kerczewski		X	Proceedings SAE 2002 General Aviation Technology Conference and Exhibition
26	2002	X		Emerging Aeronautical Communications Architecture Concept for Future Air Traffic Management Requirements	R. J. Kerczewski, R. L. Spence, R. D. Apaza, M. A. Shamma	X		Proceedings 8th Ka Band Utilization Conference
27	2002	X		Performance of VDL Mode 2 for the Aeronautical Telecommunications Network	S. Bretmersky, V. K. Konangi, R. J. Kerczewski		X	Proceedings 21st Digital Avionics Systems Conference
28	2002	X		Development of the Future Aeronautical Subnetworks Traffic Evaluator (FASTE) for CNS Systems	S. Mainger, D. Robinson, C. Wargo	X		Proceedings 21st Digital Avionics Systems Conference
29	2002	X		Dual Purpose Simulation: New Data Link Test and Comparison with VDL-2	D. Robinson	X		Proceedings 21st Digital Avionics Systems Conference
30	2002	X		Sliding Window Symbol timing Synchronizer	F. Xiong, K. Chun		X	Proceedings 21st Digital Avionics Systems Conference
31	2002	X		Satellite Communications for Aeronautical Applications: Recent Research and Development Results	R. J. Kerczewski	X		Space Communications – An International Journal, Volume 18, Nos. 1 and 2
32	2002	X		Communications, Navigation and Surveillance and the Airborne Internet	R. J. Kerczewski, P. Kelliher, C. Wargo	X		Proceedings Air Traffic Control Association 47th Annual International Technical Program and Exhibits

33	2002	X		Airborne Satcom Terminal Research at NASA Glenn,	D. Hoder, R. Zakrajsek	X		NASA/TM-2002-212006, December, 2002
<b>2003</b>								
34	2003		X	Mobile Networking Including Application to Aeronautical Internets	W. Ivancic	X		2003 ICNS
35	2003	X		Modeling CNS for the Virtual Air Space Technologies Toolbox	S. Mainger, T. Mulkerin	X		Proceedings 2003 ICNS
36	2003	X		General Aviation Aircraft Data Communications Analysis Using a Web-Based Tool	T. Mulkerin, M. Zernic		X	Proceedings 2003 ICNS
37	2003	X		Performance of VDL Mode 2 for the Aeronautical Telecommunications Network	S. Bretmersky, V. Konangi, R. Kerczewski		X	Proceedings 2003 ICNS
38	2003		X	Protected Airspace Surveillance System for National Airspace System	R. Reinhart	X		2003 ICNS
39	2003		X	Securing the Vehicle and the NAS: Information Security and CNS Hardening Research Issues	K. Martzaklis	X		2003 ICNS
40	2003	X		Requirements for Air Traffic Management Communications in the En-Route Environment	R. J. Kerczewski, R. D. Apaza	X		Proceedings 2003 IEEE Aerospace Conference
41	2003	X		Performance, Capacity and Limitations of AMSS Communications	C. Ripamonti, V. K. Konangi, R. J. Kerczewski		X	Proceedings 2003 IEEE Aerospace Conference
42	2003	X		Integrating Communications, Navigation and Surveillance for Future Airspace Operations	R. J. Kerczewski, R. D. Apaza	X		Proceedings 9th Ka and Broadband Communications Conference
43	2003	X		General Aviation Aircraft Data Communications Analysis Using a Web-Based Tool	T. Mulkerin, M. Zernic		X	Proceedings 22nd Digital Avionics Systems Conference
44	2003	X		Modeling CNS for the Virtual Air Space Technologies Toolbox	S. Mainger, T. Mulkerin	X		Proceedings 22nd Digital Avionics Systems Conference
<b>2004</b>								
45	2004	X		Weather Information Communications (WINCOMM) Project: Dissemination of Weather Information for the Reduction of Aviation Weather-Related Accident Causal Factors	M. Jarrell, T. Tanger	X		Proceedings 2004 ICNS
46	2004	X		Flight Test of Weather Data Exchange Using the 1090 Extended Squitter (1090ES) and VDL Mode 3 Data Links	J. Griner	X		Proceedings 2004 ICNS
47	2004	X		Enhancing In-Flight Transoceanic Communications Using Swift-64 Packet Mode Service	R. A. Sliwczak	X		Proceedings 2004 ICNS
48	2004		X	The Processing of Airspace Concept Evaluations Using FASTE-CNS as a Pre- or Post-Simulation CNS Analysis Tool	S. Mainger	X		2004 ICNS
49	2004	X		Proposed Development of NASA Glenn Research Center's Aeronautical Networks Research Simulator	T. C. Nguyen, R. J. Kerczewski, C. A. Wargo, M. J. Kocin and M. L. Garcia		X	Proceedings 2004 ICNS

50	2004		X	Data Communications Performance of AOCDL and AUTOMET Over a VDL Mode 2 Link	S. Bretmersky, R. Murawski, V. Konangi, R. Kerczewski		X	2004 ICNS
51	2004	X		Aviation Communications Emulation Testbed	C. Sheehe, T. Mulkerin	X		Proceedings 2004 ICNS
52	2004	X		Enhanced Oceanic Situational Awareness for the North Atlantic Corridor	B. Welch, I. Greenfeld	X		Proceedings 2004 ICNS
53	2004		X	IPv6 Test Bed for Testing Aeronautical Applications	R. Wilkins, M. Zernic, C. Dhas		X	2004 ICNS
54	2004	X		Mobile Router Testing with Diverse RF Communications Links	D.E. Brooks, D. Hoder, R. Wilkins		X	Proceedings 2004 ICNS
55	2004		X	Overview of NASA Glenn Aero/Mobile Communications Demonstrations	D.E. Brooks, D. Hoder, R. Wilkins		X	2004 ICNS
56	2004		X	NEMO Experiments	W. Ivancic	X		2004 ICNS
57	2004	X		CNS Architectures and Systems Research and Development for the National Airspace System	R. J. Kerczewski	X		Proceedings 2004 IEEE Aerospace Conference
58	2004	X		Satellite Communications Needs for Oceanic Air Traffic Management	R. J. Kerczewski, I. Greenfeld, B. W. Welch	X		Proceedings 10th Ka Band and Broadband Communications
59	2004	X		Aviation Communications Emulation Testbed	C. Sheehe, T. Mulkerin			Proceedings 23rd Digital Avionics Systems Conference
60	2004	X		Designing Adaptive Architectures for Transoceanic In-Flight Communications	R. Slywczak, O. Mezu, B. Green	X	X	Proceedings 23rd Digital Avionics Systems Conference
61	2004	X		Mobile IP Communications for Aeronautical Applications	D. Brooks, D. Hoder, R. Wilkins		X	Proceedings 23rd Digital Avionics Systems Conference
62	2004	X		Failover Switching Tests Between Two RF Communications Links	D. Brooks, D. Hoder, R. Wilkins		X	NASA/TM-2004-212953, January, 2004
63	2004	X		FAA/Eurocontrol FCS Technology Assessment	J. Budinger, P. Platt	X		ICAO Aeronautical Communications Panel WG-C 8
<b>2005</b>								
64	2005	X		An Elliptic Curve Based Authentication Protocol For Controller-Pilot Data Link Communications	D. Getachew, J. H. Griner		X	Proceedings 2005 ICNS
65	2005	X		Channel Characterization in the 5 GHz Microwave Landing System Extension Band for Future Airport Surface Communications	D. W. Matolak, L. Foore, R. Apaza		X	Proceedings 2005 ICNS
66	2005		X	A Mobile Communications Network Architecture (MCNA) to Support the Extensions of System Wide Information Management (SWIM) to the Aircraft	D. C. Morse, J. M. Budinger		X	2005 ICNS
67	2005	X		Characterizing Satellite-Based Communications to provide Seamless and Effective Transoceanic Data Dissemination	R. A. Sliwczak	X		Proceedings 2005 ICNS
68	2005	X		Flight Test of Weather Data Exchange Using the 1090 Extended Squitter (1090ES) and VDL Mode 3 Data Links	J. Griner	X		Proceedings 2005 ICNS

69	2005		X	FAA/EUROCONTROL Future Communications Study Overview and Status	J. Eck, B. Phillips, G. Anderson, R. Thomas, J. Budinger, R. Bruno, G. Dyer		X	2005 ICNS
70	2005	X		Architectural and Protocol Assessment for Optical Networks Deployed on Commercial Avionic Communication Systems	H. D. Nguyen, D. C. Ngo	X		Proceedings 2005 ICNS
71	2005	X		NASA's Proposed Requirements for the Global Aeronautical Network and A Summary of Responses	W. Ivancic	X		Proceedings 2005 ICNS
72	2005		X	An Overview, Current Status and Future Transformation Direction of NASA's CNS Research & Technology Activities	K. Martzaklis	X		2005 ICNS
73	2005	X		Communications, Navigation and Surveillance for Improved Oceanic Air Traffic Operations	R. J. Kerczewski, I. Greenfeld, B. W. Welch	X		Proceedings 2005 IEEE Aerospace Conference
74	2005	X		Test Facilities Study for the NASA Advanced CNS Architectures and Systems Technologies Project	R. J. Kerczewski, D. A. Buchanan		X	Proceedings 2005 IEEE Aerospace Conference
75	2005		X	Global Harmonization of Aeronautical Communications	R. J. Kerczewski	X		11th Ka and Broadband Communications Conference
76	2005		X	Software Defined Radio Forum Activities	C. Sheehe	X		Avionics Special Interest Group
77	2005	X		Launch Vehicle Communications	B. Welch, I. Greenfeld	X		NASA TM2005-213418, January, 2005
78	2005	X		Oceanic Situational Awareness Over the Pacific Corridor	B. Welch, I. Greenfeld	X		NASA TM2005-213397, February 2005
79	2005	X		Oceanic Situational Awareness Over the Pacific Corridor	B. Welch, I. Greenfeld	X		NASA TM2005-213623, April 2005
80	2005	X		Oceanic Situational Awareness Over the Western Atlantic Track Routing System	B. Welch, I. Greenfeld	X		NASA TM2005-213630, May 2005
81	2005	X		Oceanic Situational Awareness Over the Gulf of Mexico	B. Welch, I. Greenfeld	X		NASA TM2005-213631, May 2005
82	2005	X		5 GHz Wireless Channel Characterization for the MLS Extension Band - Measurement and Modeling Update	L. Foore	X		ICAO Aeronautical Communications Panel WG-F 14
83	2005	X		Technology Pre-Screening Process and Evaluation Status (Rev.1)	J. Budinger, G. Dyer	X		ICAO Aeronautical Communications Panel WG-C 9
84	2005	X		Analog and Digital Avionics Signal Distribution Using WDM	H. H. Refai, J. J. Sluss, M. Atiquzzaman, H. D. Nguyen		X	Proceedings 24th Digital Avionics Systems Conference
<b>2006</b>								
85	2006	X		Airport Surface Network Architecture Definition	T. C. Nguyen, W. Eddy, S. Bretmersky, F. Lawas-Grodek, B. Ellis		X	Proceedings 2006 ICNS

86	2006	X		Use of Virtual Mission Operations Center Technology to Achieve JPDO's Virtual Tower Vision	W. D. Ivancic, P. E. Paulson	X		Proceedings 2006 ICNS
87	2006	X		Wireless Channel Characterization: Modeling the 5 GHz Microwave Landing System Extension Band for Future Airport Surface Communications	D. W. Matolak, I. Sen, W. Xiong, R. Apaza, L. Foore		X	Proceedings 2006 ICNS
88	2006		X	Flight Test Results of VDL-3, 1090ES, and UAT Datalinks for Weather Information Communications	J. H. Griner	X		2006 ICNS
89	2006	X		Communication, Navigation and Surveillance Models in ACES for Concept Developers	G. Kubat, D. van Drie, G. Satapathy, A. Kumar, M. Khamma		X	Proceedings 2006 ICNS
90	2006	X		Airspace Concept Evaluation System (ACES), Concept Simulations using Communication, Navigation and Surveillance (CNS) System Models	G. Kubat, D. van Drie		X	Proceedings 2006 ICNS
91	2006	X		Emerging Definition of Next-Generation Aeronautical Communications	R. J. Kerczewski	X		Proceedings 2006 IEEE Aerospace Conference
92	2006	X		Assessing the Near-Term Applications of Satellite Systems of Aviation Safety Communications	R. J. Kerczewski	X		Proceedings 12th Ka and Broadband Communications Conference
93	2006	X		Surface CNS Network Data Requirements Study Summary	R. J. Kerczewski	X		ICAO Aeronautical Communications Panel WG-F 15
94	2006	X		Wideband Wireless Channel Characterization of the MLS Band (5000-5150 MHz) - Final Summary Report	R. J. Kerczewski	X		ICAO Aeronautical Communications Panel WG-F 15
95	2006	X		Testbed for Prototype C-band Airport Surface Wireless Network	R. J. Kerczewski	X		ICAO Aeronautical Communications Panel WG-F 15
96	2006	X		Bandwidth Requirements and Channelization Approaches for Future Airport Surface Communications in the 5091-5150 MHz Band	R. J. Kerczewski	X		ICAO Aeronautical Communications Panel WG-F 15
97	2006	X		IP mobility tutorial	W. D. Ivancic	X		ICAO Aeronautical Communications Panel WG-N 6
98	2006	X		Aircraft mobility using combination of internet standards	W. D. Ivancic	X		ICAO Aeronautical Communications Panel WG-N 6
99	2006	X		Status Report on Iridium sub-group activities	R. J. Kerczewski	X		ICAO Aeronautical Communications Panel WG-M 11
100	2006	X		Draft Iridium Manual - Part II - Implementation Guidance - Version 1.4	R. J. Kerczewski	X		ICAO Aeronautical Communications Panel WG-M 11

101	2006	X		Draft Iridium Manual - Part I - Technical Specifications - Version 1.1	R. J. Kerczewski	X		ICAO Aeronautical Communications Panel WG-M 11
102	2006	X		Suggested technology screening criteria	J. Budinger	X		ICAO Aeronautical Communications Panel WG-C 10
103	2006	X		Future communications study technology assessment activities and progress	J. Budinger	X		ICAO Aeronautical Communications Panel WG-C 10
104	2006	X		First Order Analysis of Required Bandwidth for the Next-Generation Aeronautical Data Link	J. Budinger, G. Dyer	X		ICAO Aeronautical Communications Panel WG-C 10
105	2006	X		CCC004_C3 data Analysis Plan	D. VanDrei, C. Chevalier, G. Kubat	X		Access5 Controlled
106	2006	X		CCC007_C3 Simulation Users Manual	D. VanDrei, C. Chevalier, G. Kubat	X		Access5 Controlled
<b>2007</b>								
107	2007	X		Future Communication Study Technology Investigations	T. J. Gilbert, Dyer, G., J. M. Budinger		X	Proceedings 2007 ICNS
108	2007		X	An Airborne Communications Roadmap for the U.S. Federal Air Marshal Service: Overview & Status	J. H. Griner	X		2007 ICNS
109	2007		X	Status of the NextGen ATS CNS Test Bed - "The Cleveland Test Bed	D. Hall, J. M. Budinger		X	2007 ICNS
110	2007	X		Eurocontrol/FAA Future Communications Study – Phase II Technology Assessments	R. J. Kerczewski, G. Dyer	X		Proceedings 2007 IEEE Aerospace Conference
111	2007	X		Architecture for Aeronautical Communications for the Airport Surface and Vicinity	R. J. Kerczewski, R. D. Apaza	X		Proceedings 13th Ka and Broadband Communications Conference
112	2007	X		Future Communications Study - Action plan 17 Final Conclusions and Recommendations Report	N. Fistas, B. Phillips, J. Budinger,		X	Proceedings 27th Digital Avionics Systems Conference
113	2007	X		NextGen ATS Communications, Navigation, and Surveillance Test Bed	D. Hall, J. Budinger		X	Proceedings 27th Digital Avionics Systems Conference
114	2007	X		FCS Technology Investigation Overview	B. Phillips, J. Budinger, T. Gilbert		X	ICAO Aeronautical Communications Panel 1
115	2007	X		Future Communication Study - Action Plan 17. Final Conclusions and Recommendations Report,	B. Phillips, J. Pouzet, J. Budinger		X	ICAO Aeronautical Communications Panel WGT 1
116	2007	X		FCS Technology Investigation, Conclusions and Recommendations	T. Gilbert, J. Jin, S. Henriksen, P. Platt, J. Budinger		X	ICAO Aeronautical Communications Panel WGT 1
<b>2008</b>								
117	2008	X		Future Communication Study Technology Investigation Conclusions and Recommendations	T. Gilbert, J. Jin, S. Henriksen, J. M. Budinger		X	Proceedings 2008 ICNS

118	2008		X	An Airborne Communications Roadmap for the U.S. Federal Air Marshal Service: Overview & Status	J. H. Griner	X		2008 ICNS
119	2008		X	Future Communication Study – Action Plan 17 Final Conclusions and Recommendations Report	N. Fistas, B. Phillips, J. M. Budinger		X	2008 ICNS
120	2008		X	Self-healing Adaptive Network Technologies for IVHM	J. Ishac	X		2008 ICNS
121	2008		X	Onboard IVHM Communications Requirements for Commercial Transport Aircraft	J. H. Griner	X		2008 ICNS
122	2008		X	RF Propagation in Enclosed Metallic Structures	C. Mueller, T. M. Wallett, J. H. Griner	X		2008 ICNS
123	2008		X	Next Gen Airport Surface Wireless Network: Research Plan & Test Bed Performance	S. DeHart, J. M. Budinger		X	2008 ICNS
124	2008		X	Robust Large-Scale Distributed Wireless Communication for Aircraft Integrated Vehicle Health Management	J. H. Griner	X		2008 ICNS
125	2008	X		Technology Assessment Results of the Eurocontrol/FAA Future Communications Study	R. J. Kerczewski, J. M. Budinger, T. J. Gilbert	X		Proceedings 2008 IEEE Aerospace Conference
126	2008	X		Action Plan 17 Final Conclusions and Recommendations Report	N. Fistas, B. Phillips, J. Budinger,		X	ICAO Aeronautical Communications Panel WGW 2
127	2008	X		The Technical Characteristics and Performance objectives for installed Wireless Avionics Intra-Communications (WAIC) systems	R. J. Kerczewski	X		ICAO Aeronautical Communications Panel WGW 2